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## Police sexual coercion and its association with risky sex work and substance use behaviors among female sex workers in St. Petersburg and Orenburg, Russia

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All authors had full access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

Data sharing: Data from this study can be available upon request from NGO Stellit.

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## Abstract

**Background**—Extensive research documents that female sex workers (FSWs) in Russia are very vulnerable to abuses from police, including police sexual coercion. However, despite qualitative data suggesting abusive policing practices are more likely for FSWs contending with substance abuse issues and risky sex work contexts, there is a paucity of quantitative study evaluating these associations specifically in terms of police sexual coercion. Such research is needed to guide structural interventions to improve health and safety for FSWs in Russia and globally.

**Objective**—The purpose of this study is to assess the prevalence of police sexual coercion among FSWs from two Russian cities, St. Petersburg and Orenburg, and to determine whether riskier sex work behaviors and contexts and substance use behaviors, including both IDU and risky alcohol use, are associated with increased risk for sexual coercion from police

**Method**—FSWs in St. Petersburg and Orenburg were recruited via time-location and convenience sampling and completed structured surveys on demographics (age, education), sex work risks (e.g., violence during sex work) and substance use. Logistic regression analyses assessed associations of substance use and risky sex work with police sexual coercion, adjusting for demographics.

**Results**—Participants (N=896) were aged 15 and older (94% were 20+ years). Most (69%) reported past year binge alcohol use, and 48% reported IDU the day before. Half (56%) reported 4+ clients per day. Rape during sex work ever was reported by 64%. Police sexual coercion in the past 12 months was reported by 38%. In the multivariate model, both current IDU (AOR=2.09, CI=1.45–3.02) and past year binge alcohol use (AOR=1.46, CI=1.03–2.07) were associated with police sexual coercion, as was selling sex on the street (not in venues) (AOR=7.81, CI=4.53–13.48) and rape during sex work (AOR=2.04, CI=1.43–2.92).

**Conclusion**—Current findings document the substantial role police sexual violence plays in the lives of FSWs in Russia. These findings also highlight heightened vulnerability to such violence among self-managed and substance abusing FSWs in this context. Structural interventions addressing police violence against FSWs may be useful to improve the health and safety of this population.

## Keywords

Russia; police; sex work; substance use; HIV

## INTRODUCTION

Sex work in Russia is linked to a number of health and human rights concerns including drug use, organized crime, violence and the spread of HIV/AIDS (Aral & St. Lawrence, 2002; Aral, St. Lawrence, Dyatlov, & Kozlov, 2005; Aral et al., 2003; Crago, Rakhmetova, Karadafov, Islamova, & Maslova, 2008; Decker et al., 2012; Hughes, 2002; Stachowiak et al., 2005). Sex work is not legal in the country, and is subject to administrative fine (up to

approximately 2000 rubles or US\$60) though not imprisonment (" Code of Russian Federation on administrative offenses. Article 6.11.,"). Studies document a highly structured social organization of sex work in Russia, with different venues (e.g., street, hotel, brothel, etc), time FSWs work (hours per day and days per week; intermittent), positions and functions that make up the social organization and control of FSWs (pimps, guards, drivers, police, etc), and level of power and control experienced by FSWs(Aral & St. Lawrence, 2002; Aral, et al., 2005; Aral, et al., 2003; Stachowiak, et al., 2005). These factors intersect and vary from city to city and over time in Russia, affecting FSWs' health and safety in a dynamic fashion(Aral & St. Lawrence, 2002; Aral, et al., 2005; Aral, et al., 2003; Smolskaya, Yakovleva, Kasumov, & Gheorgitsa, 2004; USAID/Stellit, 2007). Nonetheless, across contexts, controlling and abusive policing practices are documented as a major concern for FSWs in the country(Aral & St. Lawrence, 2002; Aral, et al., 2005; Aral, et al., 2003; Crago, et al., 2008; Decker, et al., 2012; Smolskaya, et al., 2004; USAID/Stellit, 2007). This study seeks to examine one important aspect of police abuse of FSWs, police sexual coercion, and its association with risky sex work and substance use.

While police abuses are widespread and well documented in Russia, FSWs are particularly vulnerable to such abuse, particularly in the form of sexual coercion (Aral & St. Lawrence, 2002; Aral, et al., 2005; Aral, et al., 2003; Crago, et al., 2008; Decker, et al., 2012; Smolskaya, et al., 2004; USAID/Stellit, 2007). Police in the country exploit the illegal nature of sex work, demanding sex for free from FSWs in lieu of paying a fine upon being arrested or in exchange for leniency towards FSWs and their pimps (Aral, et al., 2003; Decker, et al., 2012; Stachowiak, et al., 2005). Such demand for free sex is sometimes viewed as an expected sexual service for militia or police, and in the FSW context is known as "subbotnik"(Aral, et al., 2003; Stachowiak, et al., 2005). In the USSR the word "subbotnik" meant a free labor performed at leisure time for the benefit of society; however, by late Soviet times, it was regarded as an inevitable and unpleasant duty. In a qualitative study of 32 street-based FSWs in Moscow (Stachowiak, et al., 2005), women who reported experiencing subbotnik describe being treated well by the police, such as being provided dinner or time to rest and using condoms. However, other research indicates that subbotnik is generally required of, and sometimes used to define, the FSWs who are of lowest status (Aral, et al., 2003).

Such mistreatment of FSWs by police is a characteristic of the nature of police treatment of FSWs and other groups engaging in illicit behavior, such as people who inject drugs (PWID), in the context of Russia and other former Soviet states (Crago, et al., 2008; Kon, 1997; Rhodes, Simi , Baroš, Platt, & Žiki , 2008; Rhodes et al., 2012). Recent quantitative research with a small sample of FSWs in Moscow found subbotnik to be common, reported by 37%, and associated with current STI/HIV prevalence (Decker, et al., 2012). Further research is needed to document how such sexual coercion from police affects STI/HIV risk. Likely, heightened vulnerability to both police sexual coercion and HIV/STI exposure occurs for those sex workers contending with substance use and riskier sex work, but there is lack of data exploring this issue. This study hypothesizes greater vulnerability to police sexual coercion among those FSWs engaging in risky substance use, including heavy drinking and injection drug use, as well as those exposed to riskier sex work, as indicated by more frequent sex work, more sex work clients, and greater abuse from clients.

To consider police sexual coercion and how it is affected by FSWs' risky substance use and sex work, two Russian cities with distinctly different sex work profiles were included for study- St. Petersburg and Orenburg. *St. Petersburg* is a center of culture and education in Russia, a major tourist city with a population size of 5 million residents. The sex work industry in St. Petersburg is large, with about 10,000 FSWs operating in the city (Aral, et al., 2005). FSWs in St. Petersburg are mostly (approximately half) available on the street and transportation routes connecting the city center with suburbs, these street sex workers largely come to sex work due to injection drug use and work on their own often on an as needed basis for drugs or money (Aral, et al., 2005). Other sex workers are venue-based, in brothels, massage parlors, saunas and hotels; these FSWs can be "ordered" at venue sites or via catalogues, newspapers or internet sites (Aral, et al., 2005). Many of these venue-based sex workers are managed by others, though a small proportion manage themselves (Aral, et al., 2005). In contrast, *Orenburg* is a city of approximately 600,000, bordering Kazakhstan and is an industrial area where gas and oil are mined and processed. Sex work is an economic means of survival in this area where job opportunities for women are limited. Venue-based sex work is more common in Orenburg, with FSWs mostly working in the three city hotels, at "leisure agencies", and on call. Advertisements of sex work in this smaller setting occur through print advertising on columns, stops and fences along large roads, as well as via co-operation with the managers of bath-houses, saunas and taxi drivers. Self-management of FSWs is less common in Orenburg, even among street-based FSWs who, in Orenburg, often work with pimps; injection drug use among FSWs is also less common in Orenburg (USAID/Stellit, 2007). Use of these distinctly different cities provides important insight into how police sexual coercion operates in different contexts of sex work. However, both cities have an annual HIV incidence that exceeds the national average (Pokrovsky, 2012), contributing to Russia being one of the few nations in the world where the HIV epidemic is growing (Pokrovsky, 2012; UNAIDS, 2011). Understanding the role of police sexual coercion of FSWs in these two cities can guide development of interventions for FSWs to reduce risk for HIV as well as other concerns.

## METHOD

This study involved cross-sectional quantitative data collected from FSWs (N=896) recruited from the Russian cities of St. Petersburg and Orenburg. Survey data were collected from June 2007 to March 2008. This study was reviewed and approved by the ethical review board of the Sociological Institute of the Russian Academy of Sciences, Deviance and Social Control Department.

### Sampling Procedures

Sampling procedures were developed for each city with the goal of reflecting structural features of sex work, including location and type of prostitution. In St. Petersburg, sites for street sex worker recruitment were determined using key informant and observational input to create a time-location sampling procedure, i.e., a listing of locations street FSWs work by time of their work. A sample of 73 time-location clusters (different times/days across 15 locations) was selected for inclusion into the study with representation based on the above described location characteristics and with a probability proportional to the total number of

FSWs for each location. For venue-based FSWs in St. Petersburg, Stellit's relationships with managers at six brothels and two hotels facilitated recruitment. In Orenburg, key informant and observational input was also used to create a time-location sampling procedure. Twenty-five locations of street sex work were identified where an average of 5 women presented at each site throughout the day. All street FSW sites and all three hotels in Orenburg were included in the study. Brothel-based FSWs were not approached in this city because of absence of any outreach work with brothels and thus absence of established contacts and trust with the managers. In both cities, each selected cluster was visited 2–3 times, and all available FSWs at each visit were invited into this study. FSWs available solely via calls (e.g., call girls, escorts) were not able to be included in the study due to lack of connection to location.

### Recruitment and Participation

Recruitment involved trained research staff from Stellit approaching women directly at street sites and with support from managers at venue sites. Women were informed about the purpose of the study, which was a sociological examination of sex work and social and health needs of FSWs in Russia. Of 680 FSWs in St. Petersburg asked to participate in this study, 665 consented to participate in the study (97.8% response rate). In Orenburg, of 235 FSWs approached, 231 consented to participate (98.3% response rate). Thus, a final sample size of 896 participants was achieved across the two cities. Within St. Petersburg, 66.2% of FSWs were from the street (n=440), 24.1% from brothels (n=160), 5.3% from railway stations (n=35), and 4.6% from hotels (n=30). Within Orenburg, 76.6% of FSW were from the street (n=177) and 23.7% (n=54) were from hotels.

### Study Procedure

Subsequent to recruitment and acquisition of oral informed consent, all participants completed a structured face-to face survey interview specifically developed for this study. Surveys were approximately 60–90 minutes in length and assessed sociodemographic profiles (e.g., age, education), substance use and sexual behaviors, sex work experiences including police involvement, and other social and health issues relevant to FSWs in Russia, such as child abuse and sexual history. Surveys were conducted in private locations. In street sex worker settings, a van was often used to provide a private location for data collection. Surveys were administered during working hours for the sex workers, in between clients. If a woman received notification of a client during the interview, the interview stopped and was continued when the participant was next available, on the same day. Participants were given a small gift of cosmetics subsequent to completion of the survey and were thanked for their time. The survey was combined with the recruitment of FSWs into an HIV prevention program for sex workers, which included HIV counseling and education as well as condom provision, facilitating participant motivation and likely affecting the high response rate for this study.

### Measures

Although many items included in this study were used in previous research with FSWs (Smolskaya, et al., 2004; USAID/Stellit, 2007), prior to study implementation, the

survey was pilot tested with 8 FSWs in St. Petersburg to ensure its clarity and utility with this vulnerable population.

Demographic items assessed participant age, marital history and status, number of children, and education. Criminal violations were assessed by a single item on the number of convictions the participant had; this variable was dichotomized as any versus none.

Substance use measures included both alcohol and drug use items. In terms of alcohol use, participants were asked whether they had ever used alcohol (“Can we call you a total abstainer, i.e. a person who has never used any alcohol, even light drinks, during your whole life?”) and their age at first alcohol use. Any alcohol use and young age at first use (dichotomized as alcohol use prior to age 14 years versus at age 14 or older or abstainer) were constructed from single items. The subsample of alcohol users were then asked the whether they used any alcohol (listed as wine, beer, strong drinks (liquor, vodka) and premixed alcoholic cocktails (alcopops) during the last 12 months, number of days they used each type of alcohol in the past 12 months (“How frequently do you use the types of alcohol named by you above?”), to assess daily drinking. Following this, they were asked the number of drinks (standard definitions of types and volume of alcohol for wine, beer, strong drinks, and premixed cocktails) drank in a typical drinking day. These data were converted into standard equivalents of 100% ethanol and then the number of standard drinks of ethanol to define number of drinks per day. Those reporting three or more drinks per session at least once a month (equivalent of ~60 g of ethanol) were defined as binge drinkers. Similar cut-off points were previously used in many studies on different populations, including Russia (Bobak, McKee, Rose, & Marmot, 1999; Bobrova, West, Malyutina, Malyutina, & Bobak, 2010). In terms of drug use, participants were asked whether they had ever used drugs (“Have you ever used narcotic drugs and/or other similar inebriating substances not prescribed by the doctor, including non-recurrent consumption and very small quantities?”) and their age at first drug use. Any drug use and young age at first use (dichotomized as drug use prior to age 20 years versus at age 20 or older or abstainer, based on a median split) were constructed from these questions. Those reporting drug use were then asked types of drugs used, past 30 day drug use (“Did you use narcotic drugs and/or other similar inebriating substances not prescribed by the doctor, including non-recurrent consumption and very small quantities, yesterday?”), and injection drug use the day before study enrollment (“Was the drug you used yesterday an injecting one?”).

Sex work history was assessed by asking location of sex work (e.g., railway, street, brothel, sauna, hotel), duration of time having worked in sex work (categorized in years, see Table 1), number of clients served in typical working day (dichotomized as <4 or 4+, based on a median split), number of hours worked per working day in the past 12 months (< 6 hours or 6+ hours), and number of days per week engaged in sex work in the past 12 months. Measures of abuse/control in sex work were developed for this study and included questions on whether sex work was managed by self or others, history of rape during sex work, history of sexual coercion during sex work, physical violence during sex work, restricted mobility in sex work (“Have you been prohibited from going out of a house or room and into the street during sex work?”), and restricted medical care access (“Have you been prohibited from



obtaining necessary medical help during sex work?”) during sex work. History of STI in sex work based on reported diagnosis was also assessed.

Our primary outcome, police sexual coercion, was constructed by asking first whether the police were in contact with the participant in the context of sex work in the past 12 months and, if so, whether the participant was coerced to render sexual services by the police in the context of this contact.

## Data Analyses

Descriptive analysis of all variables was conducted for the total sample and stratified for study site and for those who did and did not report police sexual coercion in the past 12 months. Chi-square analyses were conducted to assess associations between all variables and police sexual coercion; differences for all variables by city were also assessed. Adjusted logistic regression models were used to determine associations between risky sex work and substance use variables with the outcome of police sexual coercion, for the total sample and stratified by site. As a first step toward model creation, we assessed for multicollinearity; a tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 was defined as indicative of a multicollinearity problem (O'Brien, 2007). Rape, sexual coercion and physical violence during sex work were collinear, so only rape was included for consideration in the final model. Venue-based sex work, street/highway/railway-based sex work, and managed by others were collinear, so only street/highway/railway-based sex work was included for consideration in the final model. Past 30 day drug use and injection drug use the day prior to study enrollment were also collinear, so only injection drug use the day prior to study enrollment was included for consideration in the final model. Once variables were selected for consideration in the final model, a regression analysis was conducted. Odds ratios were used to determine effect sizes and 95% confidence intervals were used to detect significance.

## RESULTS

### Sample Characteristics

Participants were aged 15 to 45, with most (74.1%) aged 20–29 years. Few were currently married (9.6%), but 31.4% had minor aged children. [See Table 1.]

The majority of FSWs were city residents from birth. Ten percent (10.5%) had a history of being convicted of a crime connected mainly with theft and illegal drug market. Early age at first alcohol use (<14 years) was reported by 26.8%. Daily alcohol use was reported by 30.4% of women; and 69.3% reported binge drinking in the past 12 months. Most (71.3%) had a history of drug use, with half (47.5%) reporting injection drug the day prior to study enrollment. In terms of sex work involvement, most women (86.1%) had been involved in sex work for more than a year; 56.5% for 3 or more years. The majority of FSW worked 6–7 days a week (54.2%), 6 or more hours per day (61.1%), and had four or more clients per work day (56.1%) in the past 12 months. Most experienced abuse during sex work, including rape (63.6%), sexual coercion (71.7%), and physical violence (53.9%). More than one-third of women (38.2%) reported sexual coercion from police in the past 12 months.



Chi-square analyses to assess difference between groups by site revealed may significant differences. [See Table 1.] Participants from Orenburg, relative to St. Petersburg, were more likely to be younger and migrants from within Russia or immigrants from outside of Russia. They were less likely to be married and educated beyond secondary school, to have been convicted of a crime, and to report daily alcohol use, binge alcohol use, and drug use (ever, recently, injection). Those from Orenburg were also newer to sex work (18% vs 7% in sex work <1 year), less likely to work on the streets, had less volume in sex work (fewer clients per day, fewer working days per week, fewer working hours per day), were less likely to be self-managed, and were less likely to have been abused in sex work (though this still meant that 53% had been raped during sex work and 45% had been physically assaulted during sex work). They were additionally less likely to report police sexual coercion.

### Factors Associated with Police Sexual Coercion

Chi-square analyses document increased risk for police sexual coercion among those who were city residents since birth, were residing in St. Petersburg, without college or university education, with riskier alcohol and drug use profiles, with high volume sex work (more workdays per week, more work hours per day, more clients per day) and with violence in sex work, among those reporting street-based sex work, and residence in St. Petersburg.

Notably, those whose sex work was managed by others were less likely to report a history of police sexual coercion, and conviction history was not associated with police sexual coercion.

Adjusted regression analysis revealed street sex work (AOR=8.03, 95% CI=4.58–14.07), rape during sex work (AOR=2.09, 95% CI=1.46–2.99), and recent drug injection 1.94 [1.15–3.26] as significant predictors of police sexual coercion.

For St. Petersburg, street sex work (AOR=20.70, 95% CI=8.07–53.08) and rape during sex work (AOR=2.19, 95% CI=1.44–3.33) were significantly associated with police sexual coercion. Notably, injection drug use was significantly associated with police sexual coercion until street sex work was placed in the model; injection drug use and street sex work were highly correlated though multicollinearity was not detected. For Orenburg, street sex work (AOR=4.44 [2.18, 9.06] and binge alcohol use (AOR=2.98 [1.20, 7.40] were significant predictors of police sexual coercion.

## DISCUSSION

The prevalence of police sexual coercion among FSWs in this sample from two Russian cities appears to be quite widespread, with more than one in three (38%) reporting such victimization, corroborating previous smaller scale quantitative and qualitative studies that show sexual violence against sex workers from police is highly pervasive in Russia (Aral, et al., 2003; Crago, et al., 2008; Decker, et al., 2012; Rhodes, et al., 2008; Stachowiak, et al., 2005). Such violence was substantially more likely to appear in the context of St. Petersburg relative to Orenburg, with 83% of FSW having experienced such violence were St. Petersburg residents. Such higher rates of sexual violence from St. Petersburg may be attributable to this city having more street sex work occurring; street sex work was found to

place FSWs at greater risk for police sexual coercion in the current study. As street sex work in St. Petersburg is more likely to be self-managed and involve injection drug use (Smolskaya, et al., 2004; USAID/Stellit, 2007), these sex workers are likely more vulnerable to police violence. Notably, rape in sex work is also linked to increased risk for sexual violence from police; this higher risk for rape in sex work may again be attached to heightened risk for self-managed sex workers due to their greater visibility, as has been seen in research in other settings (Decker et al., 2010; Harcourt & Donovan, 2005; Maher et al., 2011; Rhodes, et al., 2008; Shannon & Csete, 2010; Shannon et al., 2009; Shannon et al., 2009). The current finding that having someone manage your sex work decreased risk for police sexual coercion is notable as previous research has consistently described lack of autonomy among FSWs as linked to increased sexual risk for HIV (Church, Henderson, Barnard, & Hart, 2001; Decker, et al., 2010; May, Harocopos, & Hough, 2000; Prabhakar Parimi, Mishra, Tucker, & Saggurti, 2012; Silverman, 2011; Silverman et al., 2011). However, the current findings suggest that even when FSWs self-manage themselves, they remain vulnerable to external control by police. While pimps and madams are often thought of as traffickers and generally as perpetrators who take advantages of FSWs, they have also been known to offer protection, support, and improve access to health services (Aral, et al., 2005).

Beyond these structural factors of location and self-management as risks for police sexual coercion, substance use involvement also significantly increased the likelihood of sexual coercion from police. In Orenburg, where injection drug use was less common, binge alcohol use was associated with police sexual coercion; this association was not seen in St. Petersburg. In St. Petersburg, where the vast majority of street based sex workers are injection drug users, the street sex work factor eliminates the effect of injecting drugs upon the likelihood of sexual coercion from police. These findings are consistent with prior research documenting police sexual violence among substance using FSWs, both in India (Erausquin, Reed, & Blankenship, 2011) where alcohol risk was reported, and in Mexico where drug injection was reported (Beletsky et al., 2012; Miller et al., 2008; Silverman, et al., 2011).

This study offers the first quantitative analysis documenting the significant association between substance use and police sexual coercion in Russia, and highlights how type of substance associated with police sexual coercion may differ by city. Nonetheless, further research is needed to guide understanding of how police sexual violence may intersect with other forms of police violence documented against IDUs in Russia, including confiscation of needles (Beletsky, et al., 2012; Lunze et al., 2012; Rhodes et al., 2006; Sarang, Rhodes, Sheon, & Page, 2010; Wolfe, Carrieri, & Shepard, 2010). Such studies likely need to include examination of dehumanizing attitudes toward FSWs and drug users and appropriateness of police control of this population; such attitudes have been demonstrated as pervasive among police in Russia (Rhodes, et al., 2012; Sarang, et al., 2010). Such work can guide structural health intervention approaches for FSWs, an approach which has been demonstrated to work in other national settings, such as India, Dominican Republic, and the China (Kerrigan et al., 2006; Morisky & Urada, 2011; P. Parimi, Mishra, Tucker, & N., 2012).

While this study offers important findings and implications for future interventions, results should be considered in the context of a number of study limitations. This study may not be representative of the overall experiences of violence and coercion among FSW in Russia, but only of experiences among street-based FSWs in these sites. The most vulnerable sex workers, such as victims of trafficking and underage girls, are usually the most hidden in other national contexts (Brennan, 2005; Goldenberg et al., 2012; Gozdziaik & Collett, 2005; Silverman, 2011) and may be less represented in this study, as well. There is no data on the context or circumstances of the police sexual violence; thus, we cannot know whether these cases involve the level and nature of the force (e.g., in exchange for a fine or with the threat of physical violence). There are also no data to guide understanding of whether and how these indications of force may be linked to other forms of police violence and control, such as extortion and harassment of IDUs (e.g., confiscation of needles), behaviors demonstrated in previous research from Russia (Rhodes, et al., 2006; Sarang, et al., 2010; Wolfe, et al., 2010). How police sexual violence impacts HIV prevention, including the police practice of using condoms as evidence to arrest FSWs (Borges, Medina-Mora, Breslau, & Aguilar-Gaxiola, 2007; Rhodes, et al., 2008; Shannon et al., 2008; Shannon, et al., 2009) further needs investigation. These limitations support the need for further research to clarify current study findings.

## CONCLUSION

Current findings document the substantial role police sexual violence plays in the lives of FSW in Russia. These findings also highlight heightened vulnerability to such violence among self-managed and substance abusing FSW in this context. Structural interventions addressing police violence against FSW may be useful to improve the health and safety of this population. However, more research on this issue is needed to help clarify current study findings, investigate the relationship between police sexual coercion and HIV/STI, and support future intervention efforts in this area.

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**Table 1**

Demographic, substance use, and sex work characteristics of FSW, Russia (N=896); chi-square analyses to assess differences in these characteristics for FSW from St. Petersburg and Orenburg.

	Total Sample N=896 n (%)	St. Petersburg N=665 n (%)	Orenburg N=231 n (%)	p- values
DEMOGRAPHICS				
Age				
15 – 19	50(5.6)	19(2.9)	31(13.4)	0.001
20 – 24	301(33.6)	203(30.5)	98(42.4)	
25 – 29	363(40.5)	287(43.2)	76(32.9)	
30 +	182(20.3)	156(23.5)	26(11.3)	
City resident since birth				
Yes	662(73.9)	518(77.9)	144(62.3)	0.001
No	234(26.1)	147(22.1)	87(37.7)	
Migrants from other parts of Russia				
Yes	166(18.5)	107(16.1)	59(25.5)	0.001
No	730(81.5)	558(83.9)	172(74.5)	
Immigrants from outside of Russia				
Yes	67(7.5)	39(5.9)	28(12.1)	0.01
No	829(92.5)	626(94.1)	203(87.9)	
Education				
Secondary/Vocational school	668 (74.6)	471(70.8)	197(85.3)	0.001
College/ University	228 (25.4)	194(29.2)	34(14.7)	
Currently married				
Yes	86(9.6)	74(11.1)	12(5.2)	0.01
No	807(90.4)	590(88.9)	217(94.8)	
Ever married				
Yes	270(30.2)	214(32.2)	56(24.5)	0.05
No	623(69.8)	450(67.8)	173 (75.5)	
Any minor aged children				
Yes	280(31.3)	220 (33.1)	60 (26.0)	0.05
No	616(68.8)	445 (66.9)	171(74.0)	
Convictions ever				
Yes	94(10.5)	93(14.0)	1(0.4)	0.001
No	802(89.5)	572(86.0)	230(99.6)	
Reason(s) for past conviction				

	<b>Total Sample N=896 n (%)</b>	<b>St. Petersburg N=665 n (%)</b>	<b>Orenburg N=231 n (%)</b>	<b>p- values</b>
Article 158. Theft	31(33.0)	31(33.7)	0(0)	
Article 159. Fraud	2(2.1)	2(2.2)	0(0)	
Article 161. Robbery	8(8.5)	8(8.7)	0(0)	
Article 161. Robbery with violence	1(1.1)	1(1.1)	0(0)	
Article 224. Negligent storage of firearms	3(3.2)	3(3.3)	0(0)	
Article 228. The illegal acquisition, storage, transportation, manufacturing, processing of narcotic drugs	67(71.3)	67(72.8)	0(0)	
Article 234. Illicit trafficking of strong or poisonous substances in purpose of sale	2(2.1)	2(2.2)	0(0)	
No answer	1(1.1)	0(0)	1(0.4)	n/a
<b>ALCOHOL USE</b>				
<b>Alcohol Use Prior to Age 14 Years</b>				
Yes	240(26.8)	187(28.1)	53(22.9)	
No	656(73.2)	478(71.9)	178(77.1)	n/s
<b>Daily Alcohol Use, past 12 months</b>				
Yes	272(30.4)	224(33.7)	48(20.8)	
No	624(69.6)	441(66.3)	183(79.2)	0.001
<b>Binge Alcohol Use, past 12 months</b>				
Yes	621(69.3)	442(66.5)	179(77.5)	
No	275(30.7)	223(33.5)	52(22.5)	0.001
<b>DRUG USE</b>				
<b>Ever Drug use</b>				
Yes	639(71.3)	572(86.0)	67(29.0)	
No	257(28.7)	93(14.0)	164(71.0)	0.001
<b>First Drug Use Prior to Age 20 Years</b>				
Yes	443(49.4)	386(58.0)	174(75.3)	
No	453(50.6)	279(42.0)	57(24.7)	0.001
<b>Any Drug Use past 30 days</b>				
Yes	513(57.3)	490(73.7)	23(10.0)	
No	383(42.7)	175(26.3)	208(90.0)	0.001
<b>Injection Drug Use the day prior to study enrollment</b>				
Yes	426(47.5)	422(63.5)	4(1.7)	
No	470(52.5)	243(36.5)	227(98.3)	0.001
<b>SEX WORK HISTORY</b>				
<b>Currently Venue-Based Sex Work</b>				
Yes	569(63.5)	418(69.2)	151(65.4)	



	Total Sample N=896 n (%)	St. Petersburg N=665 n (%)	Orenburg N=231 n (%)	p- values	
No	327(36.5)	247(37.1)	80(34.6)	n/s	
Currently Street/Highway/Railway-Based Sex Work					
Yes	597(66.6)	473(71.1)	124(53.7)	0.001	
No	299(33.4)	192(28.9)	107(46.3)		
Time in Sex Work					
<1 year	125(14)	80(12.0)	45(19.5)	0.001	
1–3 years	265(29.6)	182(27.4)	83(35.9)		
3–5 years	284(31.7)	224(33.7)	60(26.0)		
5+ years	222(24.8)	179(26.9)	43(18.6)		
Number of clients served in typical working day, past 12 months					
1–3 clients per day	389(43.9)	260(39.3)	129(57.1)	0.001	
4+ clients per day	498(56.1)	401(60.7)	97(42.9)		
Number of hours worked per working day, past 12 months					
<Under 6 hours	410(45.9)	281(42.4)	129(56.1)	0.001	
6 + hours	483(54.1)	382(57.6)	101(43.9)		
Number of days per week doing sex work, past 12 months					
1–3 days	88(9.9)	69(10.4)	19(8.4)	n/s	
4–5 days	319(35.9)	236(35.6)	83(36.7)		
6–7 days	481(54.2)	357(53.9)	124(54.9)		
ABUSE/CONTROL IN SEX WORK					
Police sexual coercion, past 12 months					
Yes	342(38.2)	283(42.6)	59(25.5)	0.001	
No	554(61.8)	382(57.4)	172(74.5)		
Managed by others in sex work					
Yes	362(40.4)	197(29.6)	66(28.6)	0.001	
No	534(59.6)	468(70.4)	165(71.4)		
Raped During Sex Work, Ever					
Yes	570(63.6)	423(63.6)	147(63.6)	n/s	
No	326(36.4)	242(36.4)	84(36.4)		
Coerced Sexually During Sex Work, Ever					
Yes	642(71.7)	489(73.5)	153(66.2)	0.05	
No	254(28.3)	176(26.5)	78(33.8)		
Physical Violence During Sex Work, Ever					
Yes	483(53.9)	360(54.1)	123(53.2)		

	<b>Total Sample N=896 n (%)</b>	<b>St. Petersburg N=665 n (%)</b>	<b>Orenburg N=231 n (%)</b>	<b>p- values</b>
No	413(46.1)	305(45.9)	108(46.8)	n/s
<b>Restricted mobility in sex work, Ever</b>				
Yes	300(33.5)	196(29.5)	104(45.0)	
No	596(66.5)	469(70.5)	127(55.0)	0.001
<b>Restricted medical care in sex work, Ever</b>				
Yes	133(14.8)	82(12.3)	51(22.1)	
No	763(85.2)	583(87.7)	180(77.9)	0.001
<b>STI During Sex Work, Ever</b>				
Yes	353(39.4)	227(34.1)	127(55.0)	
No	543 (60.6)	438 (65.9)	104(45.0)	0.001

**Table 2**

Demographic, substance use, and sex work characteristics of FSW from St. Petersburg and Orenburg, Russia (N=896); chi-square analyses to assess differences in these characteristics for FSW reporting and not reporting police sexual coercion in the past 12 months.

	<b>Police Sexual Coercion N=342 n (%)</b>	<b>No Police Sexual Coercion N=554 n (%)</b>	<b>p-values</b>
<b>DEMOGRAPHICS</b>			
<b>Age</b>			
15 – 19	16(4.7)	34(6.1)	Ns
20 – 24	109(31.9)	192(34.7)	
25 – 29	145(42.4)	218(39.4)	
30 +	72(21.1)	110(19.9)	
<b>City</b>			
St.Petersburg	283(82.7)	382(69.0)	0.001
Orenburg	59(17.3)	172(31.0)	
<b>City resident since birth</b>			
Yes	286(83.6)	376(67.9)	0.001
No	56(16.4)	178(32.1)	
<b>Migrants from other parts of Russia</b>			
Yes	39(11.4)	127(22.9)	0.001
No	303(88.6)	427(77.1)	
<b>Immigrants from outside of Russia</b>			
Yes	16(4.7)	51(9.2)	0.01
No	326(95.3)	503(90.8)	
<b>Education</b>			
Secondary/Vocational school	281 (82.2)	387 (69.9)	0.001
College/ University	61 (17.8)	167 (30.1)	
<b>Currently married</b>			
Yes	30(8.8)	56(10.1)	Ns
No	311(91.2)	496(89.9)	
<b>Ever married</b>			
Yes	99(29.0)	171(31)	Ns
No	242(71.0)	381(69)	
<b>Any minor aged children</b>			
Yes	107(31.3)	173(31.2)	Ns
No	235(68.7)	381(68.8)	

	Police Sexual Coercion N=342 n (%)	No Police Sexual Coercion N=554 n (%)	p- values
<b>Convictions ever</b>			
Yes	43(12.6)	51(9.2)	Ns
No	299(87.4)	503(90.8)	
<b>ALCOHOL USE</b>			
<b>Alcohol Use Prior to Age 14 Years</b>			
Yes	120(35.1)	120(21.7)	0.001
No	222(64.9)	434(78.3)	
<b>Daily Alcohol Use, past 12 months</b>			
Yes	147(43.0)	125(22.6)	0.001
No	195(57.0)	429(77.4)	
<b>Binge Alcohol Use, past 12 months</b>			
Yes	251(73.4)	370(66.8)	0.05
No	91(26.6)	184(33.2)	
<b>DRUG USE</b>			
<b>Ever Drug use</b>			
Yes	294(86.0)	345(62.3)	0.001
No	48(14.0)	209(37.7)	
<b>First Drug Use Prior to Age 20 Years</b>			
Yes	220(64.3)	223(40.3)	0.001
No	122(35.7)	331(59.7)	
<b>Any Drug Use past 30 days</b>			
Yes	279(81.6)	234(42.2)	0.001
No	63(18.4)	320(57.8)	
<b>Injection Drug Use the day prior to study enrollment</b>			
Yes	252(73.7)	174(31.4)	0.001
No	90(26.3)	380(68.6)	
<b>SEX WORK HISTORY</b>			
<b>Currently Venue-Based Sex Work</b>			
Yes	177(51.8)	392(70.8)	0.001
No	165(48.2)	162(29.2)	
<b>Currently Street/Highway/Railway-Based Sex Work</b>			
Yes	322(94.2)	275(49.6)	0.001
No	20(5.8)	279(50.4)	

	Police Sexual Coercion N=342 n (%)	No Police Sexual Coercion N=554 n (%)	p- values
<b>Time in Sex Work</b>			
<1 year	25(7.3)	100(18.1)	
1–3 years	90(26.3)	175(31.6)	
3–5 years	123(36)	161(29.1)	
5+ years	104(30.4)	118(21.3)	0.001
<b>Number of clients served in typical working day, past 12 months</b>			
1–3 clients per day	110(32.2)	279(51.2)	
4+ clients per day	232(67.8)	266(48.8)	0.001
<b>Number of hours worked per working day, past 12 months</b>			
<Under 6 hours	133(38.9)	277(50.3)	
6 + hours	209(61.1)	274(49.7)	0.001
<b>Number of days per week doing sex work, past 12 months</b>			
1–3 days	16(4.7)	72(13.2)	
4–5 days	78(22.9)	241(44.1)	
6–7 days	247(72.4)	234(42.8)	0.001
<b>ABUSE/CONTROL IN SEX WORK</b>			
<b>Managed by others in sex work</b>			
Yes	67(19.6)	295(53.2)	
No	275(80.4)	259(46.8)	0.001
<b>Raped During Sex Work, Ever</b>			
Yes	274(80.1)	296(53.4)	
No	68(19.9)	258(46.6)	0.001
<b>Coerced Sexually During Sex Work, Ever</b>			
Yes	288(84.2)	354(63.9)	
No	54(15.8)	200(36.1)	0.001
<b>Physical Violence During Sex Work, Ever</b>			
Yes	235(68.7)	248(44.8)	
No	107(31.3)	306(55.2)	0.001
<b>Restricted mobility in sex work, Ever</b>			
Yes	118(34.5)	182(32.9)	
No	224(65.5)	372(67.1)	NS
<b>Restricted medical care in sex work, Ever</b>			
Yes	63(18.4)	70(12.6)	
No	279(81.6)	484(87.4)	0.05

	Police Sexual Coercion N=342 n (%)	No Police Sexual Coercion N=554 n (%)	p- values
<b>STI During Sex Work, Ever</b>			
Yes	140(40.9)	213(38.4)	
No	202(59.1)	341 (61.6)	NS

**Table 3**

Regression analyses to assess associations between substance use and police sexual coercion among FSW in St. Petersburg and Orenburg, Russia. (N=896); Method=enter.

	Both cities		St. Petersburg		Orenburg	
	AOR [95.0% C.I.]	p- value	AOR [95.0% C.I.]	p- value	AOR [95.0% C.I.]	p- value
Education (College, University)	.663 [.448–.982]	.040	.820 [.669–1.005]	.055	1.048 [.713–1.542]	n/s
Binge Alcohol Use, past 12 months	1.414 [.996–2.009]	.053	1.151 [.774–1.710]	n/s	2.978 [1.199–7.399]	0.019
Injection Drug Use the day prior to study enrollment	1.936 [1.150–3.260]	.013	1.351 [.748–2.441]	n/s	1.226 [.093–16.159]	n/s
Sold sex on the street/highway/railway station	8.030 [4.583–14.068]	.000	20.696 [8.069–53.081]	.000	4.444 [2.179–9.061]	.000
Rape during sex work ever	2.089 [1.457–2.993]	.000	2.187 [1.436–3.331]	.000	1.872 [.919–3.812]	n/s
City resident since birth	1.222 [.811–1.841]	n/s	.987 [.571–1.708]	n/s	1.289 [.660–2.518]	n/s
City	.918 [.533–1.583]	n/s	-	-	-	-